



## Degree Profile

# Master in Epidemiology

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| <b>Organizational unit</b>     | Swiss Tropical and Public Health Institute            |
| <b>Degree</b>                  | MSc in Epidemiology                                   |
| <b>Range, Duration, Start</b>  | 120 ECTS, 4 semesters (if full-time), autumn semester |
| <b>Language of instruction</b> | English   |

## Program Goals

Students develop solid theoretical and methodological knowledge of key concepts in epidemiology and applied biostatistics. They acquire the ability to design and execute basic field studies, collect and analyze data, report results in written and oral form as well as collaborate in multidisciplinary teams.

## Program Characteristics

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|-----------------------------|--|
| <b>Orientation</b>          | Scientific education   |
| <b>Subject area</b>         | Veterinary Medicine, Sociology, Psychology, Pharmaceutical Sciences, Nursing sciences, Life sciences and technologies, Human medicine, Geography, Forestry, Food sciences, Environmental Sciences, Economics, Dentistry, Biology, Biochemistry, Applied biosciences, Agricultural Sciences   |
| <b>Majors</b>               | –  |
| <b>Program structure</b>    | The curriculum consists of the modules: Foundations in Epidemiology (15 ECTS); Biostatistics and Computing (15 ECTS); Global & Public Health (10 ECTS); Transferable Skills and Competences (5 ECTS); Advances in Epidemiology, Statistics and Global & Public Health (15 ECTS); Master's thesis (50 ECTS); Master's exam (10 ECTS).   |
| <b>Distinctive Features</b> | The Swiss Tropical and Public Health Institute, an affiliated institute of the University of Basel, is a world-leading institution dedicated to improving global health through excellence in research, services, and teaching and training. It offers an interactive and highly interdisciplinary environment for students interested in infection biology, epidemiology and public health, and covers a wide spectrum of research areas. The degree program in Epidemiology is structured in foundational, advanced and optional courses and offers a strong base in applied public health work. |

## Career Opportunities

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| <b>Employment</b>      | Academia; health care industry; pharmaceutical companies; governmental and non-governmental public health organizations; development cooperation |
| <b>Further Studies</b> | Doctorate  |

## Teaching

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|--------------------|---|
| <b>Approaches</b>  | Lectures, practicals with problem-based learning, autonomous learning, research-oriented learning, field excursions, case studies |
| <b>Assessments</b> | Oral and written examinations, active course participation, essays, presentations, master's thesis, master's examination          |

## Competences

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| <b>Generic</b><br>Attitude / Communication<br>Approach / Management                                  | Students acquire the skills to ... <ul style="list-style-type: none"> <li>– study scientific literature and understand scientific concepts.</li> <li>– carry out independent and applied scientific research.</li> <li>– work independently and as part of an interdisciplinary team.</li> <li>– present scientific results including their own findings effectively in oral and in written form to specialist as well as general audiences.</li> <li>– produce a research proposal that fulfils the requirements of an ethics review committee.</li> <li>– deal responsibly with ethical and moral aspects of scientific work.</li> <li>– organize scientific work processes and interventions efficiently through prior planning and priority setting.</li> <li>– lead discussions and deal constructively with criticism.</li> </ul>  |
| <b>Subject-related</b><br>Knowledge / Understanding<br>Application / Judgment<br>Interdisciplinarity | Students acquire the skills to ... <ul style="list-style-type: none"> <li>– understand health problems and risk factors at the individual and population level.</li> <li>– design an epidemiological study for communicable and non-communicable diseases and select the optimal design over possible alternatives.</li> <li>– conduct disease surveillance and propose intervention measures.</li> <li>– analyse social, ecological and economic factors from a local, national or transnational perspective.</li> <li>– understand the interrelationships between epidemiology and biostatistics.</li> <li>– apply standard quantitative methods and study designs in epidemiological research.</li> <li>– contribute epidemiological and statistical knowledge in interdisciplinary collaboration.</li> <li>– collect, manage and analyse empirical data sets with specialized data management and statistical programs.</li> </ul> |

## Learning Outcomes

Graduates of the master's program in Epidemiology...

- can identify a public health issue or epidemiological problem at the population level in a given socio-cultural, ecological and economic context in order to design a comprehensive scientific study.
- know the main issues and areas of work in epidemiology and public health nationally as well as internationally, and can apply this knowledge to contribute to a critical scientific discourse.
- are able to correctly implement an epidemiologic study based on their knowledge of epidemiological study designs and methods, including the successful submission of a proposal to an ethics review committee, the comprehensive management of all aspects of implementation and data management, and are able to effectively present their results to peers as well as to the general public in written and oral form.
- are able to collaborate effectively in multidisciplinary research teams in the frame of large, interdisciplinary research projects.
- understand the ethical aspects of their research work and are able to apply this knowledge responsibly in research projects.
- are able to effectively formulate and evaluate a public health intervention based on their profound knowledge of health problems, societal context and risk factors at the individual and population level.